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ABSTRACT

The activities and experiences of students who were high school seniors in 1980 were surveyed four years later. Data were provided from the High School and Beyond base-year survey (1980), the first follow-up in 1982, and the second in the spring of 1984, focusing on the graduates' educational, vocational, socioeconomic and familial status, and their plans and attitudes. Results indicated that 66 percent were employed and 39 percent were enrolled in courses. Twenty-six percent were or had been married. Children were reported by 13 percent of the males and 21 percent of the females. Business was the most common college major, represented by 24 percent. Vocational, associate, and four-year degrees had been earned by one, five, and eight percent of the students, respectively. Selected experiences, attitudes, and life goals were also surveyed. Over half of the respondents reported having experience with a computer terminal in the workplace or classroom; about one-quarter had also used other types of equipment. Six to thirteen percent reported experience with various types of software packages. Two-thirds had registered to vote. A shift in personal values was noted, toward family and personal life and away from success and mobility. (GDC)

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Four Years After High School: A Capsule Description of 1980 Seniors

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Four Years After High School:
A Capsule Description of 1980 Seniors

The National Opinion Research Center (NORC)

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CS 86-210

Foreword

This capsule description provides a general overview of the activities and experiences of the 1980 high school seniors four years later. It uses information from High School and Beyond's base-year, first follow-up (1982), and second follow-up (1984) surveys. The Center for Statistics (CS) plans to conduct or to sponsor a number of analytical reports that will address a variety of topics in greater detail than that provided here. CS has computer tapes available to those wishing to carry out their own analyses of special questions and issues. Among the topics to be addressed in future CS analytic studies are: Persistence in College, Impact of Vocational Education, College Offerings and Enrollment, Student Financial Aid in Colleges.

CS also maintains a large set of summary statistics on a microcomputer database. Statistics contained in the database cover the same topics described in this report but in much greater detail. For instance, in addition to the activities of the total 1980 senior population (table 1) the database has estimates for the activities of males and females and five race/ethnic groups, each further broken down by 29 independent variables.

Information about obtaining HS&B computer tapes is available from the U.S. Department of Education, Office of Educational Research and Improvement, Information Systems and Media Services Branch, 555 New Jersey Avenue, NW., Room 304B, Capitol Place Building, Washington, D.C. 20208-1327.

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I. INTRODUCTION

Background and Purpose

The High School and Beyond (HS&B) study is a nationally representative sample survey of 1980 high school sophomores and seniors in the United States. As a large-scale, longitudinal survey, the study's primary purpose is to observe the educational and occupational plans and activities of young people as they pass through the American educational system and take on their adult roles. The study should ultimately contribute to an understanding of the development of young adults and of the factors that determine individual education and career outcomes. Such information is useful as a basis for review and reformulation of federal, state, and local policies affecting the transition of youth from school to adult life.

The availability of this longitudinal data base encourages in-depth research for meeting the educational policy needs of the 1980s at local, state, and federal levels. HS&B data will help in evaluating: the strength of secondary school curricula; the quality and effectiveness of secondary and postsecondary schooling; the demand for postsecondary education; problems of financing postsecondary education; the adequacy of postsecondary alteratives open to high school students; the need for new types of educational programs and facilities to develop the talents of our youth; and the educational, vocational, and personal development of young people and the institutional, familial, social, and cultural factors that affect that development.

HS&B is the second in a program of longitudinal studies sponsored by the Center for Statistics (CS). The first was the National Longitudinal Study of the High School Class of 1972 (NLS-72), which began in 1972. Four follow-up surveys were completed by 1979, and the fifth follow-up survey will take place in 1986.

The CS (under its former name the National Center for Education Statistics) longitudinal studies program is based on the assumption that federal, state, and local policies affecting the transition from school to work need to be grounded on facts concerning the processes of the American educational system that intervene between inputs (such as student characteristics) and outputs (such as degrees and diplomas awarded). The longitudinal studies program provides statistics on the education, work, and family experiences of young adults for the pivotal years during and immediately following high school. The fourth follow-up of the NLS-72 provides information on the outcomes of schooling seven years after high school, while the base year and two follow-up HS&B surveys provide current information on high school experiences, student cognitive growth, and the transition to early adult life.

The HS&B study was designed to gather the same types of data as were collected in the first CS longitudinal study. The study of the HS&B senior cohort replicates many aspects of NLS-72, both in the questionnaires and in the cognitive tests. This allows inter-study comparisons to be made of the possible effects of economic and social changes that occurred in the years since 1972. However, the second study differs from the first in two significant ways. First, it addresses certain elements in the educational process that were not included in the earlier study. HS&B is the first longitudinal study of students to survey parents concerning their aspirations for their children and their ability and desire to pay for the fulfillment of these aspirations. HS&B is also the first study to survey teachers concerning their assessment of their students' futures. Second, it extends the scope of the population to the sophomores of 1980 as well as the seniors; and thus makes possible a fuller understanding of the secondary school experience, its long-term impact on students, and the factors that influence the decision to drop out of school early. Detailed information on courses taken and grades achieved (from complete high school transcripts) also permits examination of the relationships between student and school characteristics, on the one hand, and patterns of course taking and student achievement on the other.

HS&B Base Year Survey

The base year survey was conducted in spring 1980. The study design included a highly stratified national probability sample of over 1,100 high schools with a sample of 36 seniors and 36 sophomores per school. (In those schools with fewer than 36 seniors or sophomores, all eligible students were included in the sample.) Cooperation from both schools and students was excellent. Over 30,000 sophomores and 28,000 seniors enrolled in 1,015 public and private high schools across the nation participated in the base year survey. The response rate for schools was 70 percent (91 percent after replacement of nonresponding schools with similar schools), and for students within participating schools it was 84 percent.

Questionnaires and cognitive tests were administered to each student in the HS&B sample. The student questionnaire covered school experiences, activities, attitudes, plans, selected background characteristics, and language proficiency. Other groups of respondents provided other types of information. The administrator in each selected school filled out a questionnaire about the school; teachers in each school were asked to make comments on students in the sample; each twin in the sample was identified and his/her counterpart twin was also identified and surveyed; and a sample of parents of sophomores and seniors (about 3,600 for each cohort) was surveyed primarily for information on plans for financing of higher education. The total survey effort thus provided a comprehensive data base for analyses in education and other areas of behavioral and social science.

Base year survey data are summarized in a descriptive way for both cohorts in A Capsule Description of High School Students (CS 81-244, April 1981). First follow-up survey results are covered in two reports--Two Years after High School: A Capsule Description of 1980 Seniors (CS 84-209, April 1984), and Two Years in High School: The Status of 1980 Sophomores in 1982 (CS, 84-207, April 1984).

HS&B First Follow-Up Survey

The first follow-up survey took place in spring 1982. All students who had been selected for inclusion in the base year survey, whether or not they actually participated, had a chance of being included in the first follow-up sample. The sophomore cohort sample design called for including with certainty all members still in the same school, and for subsampling all others. The resulting sample size was 29,737. Of these, a subsample of 18,000 was selected for a study of high school transcripts.

Cognitive tests--the same ones employed in the base year survey--and questionnaires were administered to those out of school (dropouts and early graduates) as well as to those still in school, including those who had transferred to other schools. Questionnaires were completed by 28,199 (94.6 percent) of the 29,737 sample members and the test battery by 26,216 (88.2 percent). School administrators were asked to complete a school questionnaire to update information about their schools and also to provide a copy of their "Master Teaching Schedule."

In designing the senior cohort first follow-up survey, one of the goals was to reduce the size of the retained sample to about 12,000 while keeping sufficient numbers of certain subgroups (e.g., Hispanics, blacks and other minority groups) to allow important policy analyses. A total of 11,227 (93.6 percent of the 11,995 persons sub-sampled) completed the first follow-up questionnaire--8,990 by mail, 956 by telephone, and 1,281 by in-person interview. Information was obtained about the respondents' school and employment experiences, family status, and attitudes and plans. Tests were not administered to the senior cohort members.

Both the base year survey and the first follow-up survey included an Hispanic supplement, i.e., a deliberate oversampling of Hispanic students so that this subset of the population would be sufficiently represented to permit relevant policy analyses. The Hispanic supplements were included at the request of, and with funding supplied by, the Office of Bilingual Education and Minority Language Affairs (OBEMLA) within the Department of Education.

Several CS-sponsored analytic studies using these data have been undertaken. Among the topics investigated in special in-depth analyses were excellence in secondary education, transition to postsecondary education, high school dropouts, transition of Hispanic students from high school to postsecondary education and

from school to work, and the high school diploma as a terminal degree. The base year, first follow-up, and second follow-up data are available for public use and researchers are encouraged to conduct additional analytic studies using this data base.

HS&B Second Follow-Up

The second follow-up survey took place in spring 1984. The sample consisted of 12,199 members of the senior cohort and 15,000 from the sophomore cohort. The senior sample consisted of 11,500 students who had participated in the base year, 495 students who had not participated in the base year, and 204 non-sampled co-twins (or co-triplets) of sampled students.

The design for the sophomore sample followed a similar plan. Approximately 15,000 cases were selected from among the 18,500 sophomore cohort members who had participated in the transcript study component of the first follow-up survey. In selecting these 15,000 cases an effort was made to include, to the greatest extent possible, students whose parents had, in the base year survey, completed the Parent Questionnaire (which dealt primarily with the financing of postsecondary education).

Both the sophomore and the senior samples contained disproportionately large numbers of Hispanics and blacks, so that it would be possible to perform special analyses of these policy-relevant subgroups. The inclusion of 1,500 additional Hispanics beyond the number expected in the core sample again was made possible by a transfer of funds to CS from OBEMLA. The design also preserved as far as possible the original samples of Asians and Pacific Islanders, Americans Indians or Alaskan Natives, and twins of all races.

For both the senior and the sophomore samples only one instrument, a mailback questionnaire, was used. That instrument was quite similar to the first follow-up questionnaire. Seniors were asked to update background information and to provide information about their postsecondary education, work experience, military service, family, income, and life goals. New items included a limited series on computer literacy, detailed information on financial assistance received from parents for postsecondary education, and periods of unemployment. The mailback questionnaire was returned by 73 percent of the senior sample. An additional 13 percent of the sample were interviewed by telephone and 5 percent were interviewed in person. The completion rate for the senior cohort was 91 percent. Among the sophomore cohort, 60.6 percent returned their mail questionnaire. Telephone and in-person interviews brought the completion rate up to 92 percent.

HS&B Third Follow-Up Survey

In 1986 the third follow-up survey of both HS&B cohorts will take place along with the fifth follow-up survey of a portion of the NLS-72 sample.

Objectives and Organization of This Report

This report contains a summary of descriptive information about 1980 seniors four years after leaving high school--their educational, vocational, socioeconomic, and familial status, and their plans and attitudes. The report demonstrates the breadth and depth of the data and presents some illustrative findings from our preliminary analyses. (A similar report is available for the 1980 sophomore cohort.) The remainder of this report, chapters II through V, is organized into five topical areas. Chapter II provides an overview of what 1980 seniors were doing in the spring of 1984; chapter III describes their postsecondary education experiences (enrollment, field of study, plans for graduate education, and financing); chapter IV, their labor force experiences (employment status, type of job, and earnings); chapter V, their experiences with electronic equipment, their voting behavior, and their life goals. Throughout the report, trends over time are noted.

Appendix A presents a description of HS&B data files available for public use; appendix B defines the variables that were used to divide the total population into subgroups; and appendix C discusses the HS&B sample design and the quality of the data.

II. CURRENT ACTIVITIES AND FAMILY FORMATION

The 1980 senior cohort was initially surveyed during the spring of 1980, when all of its members were finishing their last semester of high school. This group has since been resurveyed twice. The first time, in 1982, was early in the critical transition to adulthood, shortly after all had completed or left secondary education and had begun to make choices concerning postsecondary education, labor force participation, family formation, and other activities. The second and most recent survey of this group occurred in 1984, a time when many of its members were at another critical juncture. Some were completing activities begun earlier, such as postsecondary degrees. Others were changing course, from school to work, or from military service to schooling. As the members of the cohort were maturing, more were forming families of their own.

This chapter provides an overview of the activities in 1984 of the class of 1980. Later chapters describe some of these activities in more detail. The reader should keep in mind that the activity categories are not mutually exclusive, which means that respondents could indicate participation in more than one.

Selected Activities: An Overview

Four years after high school the primary activity of the class of 1980 was work. As table 1 shows, a large majority of this cohort, 66 percent, was working full- or part-time in February of 1984. This is in fact the only activity (of those listed in the questionnaire) in which a majority of the cohort was engaged, and it was reported by nearly twice the number of students as the next highest activity--attendance at a two- or four-year college. Among the listed activities involvement in graduate studies was one of those cited by less than one percent of the population. This is to be expected, since, at the time of the survey, most of those who had attended college had not yet graduated.

Working and Labor Force Participation

This cohort's involvement in the labor force is noteworthy. Supplementing the considerable proportion of the population that was working (66 percent) are those who were engaged in other forms of labor force activity--looking for work, on active military duty, or in possession of a job but not currently working. These additions resulted in a labor force participation rate of 77 percent for the cohort (see table 1).

Males were slightly more likely than females to be working (3 percentage points) but much more likely to be in the labor force (84 percent versus 72 percent), with the largest part of the

Table 1. Percentages of 1980 high school seniors in specified activities, by selected student characteristics: spring 1984.

Characteristics	Working	Taking vocat. courses	Taking acad. courses	Taking grad. courses	Apprentice	Active duty	Keeping house	Temp. layoff	Looking for work	Break from work/ school
Total population	66	5	33	1	1	4	7	1	6	2
Sex:										
Male	67	5	34	1	1	7	1	2	7	1
Female	64	5	31	1	0	1	13	1	6	2
Race/ethnicity:										
Hispanic	71	6	23	1	0	3	8	2	8	2
Am.Ind./Al.Nat.	64	7	24	1	2	3	10	3	12	2
Asian/Pac.Isl.	52	9	57	1	0	4	7	1	4	3
Black	57	8	26	0	1	6	9	2	11	3
White	67	4	34	1	1	4	7	1	6	2
Other	70	1	22	0	0	0	7	0	5	0
H.S. test quartile:										
4th quartile high	55	4	63	2	1	4	3	0	3	1
3rd quartile	67	5	38	1	1	5	6	1	4	2
2nd quartile	70	5	24	1	1	5	8	2	6	1
1st quartile low	68	5	10	0	1	4	13	2	11	2
SES quartile:*										
4th quartile high	54	4	61	2	1	3	4	1	4	1
3rd quartile	68	5	36	1	1	4	5	1	4	2
2nd quartile	72	5	24	1	1	6	8	2	6	2
1st quartile low	67	5	16	0	1	5	12	2	11	2

*Socioecomomic status as of 1980.

difference accounted for by males' greater involvement in the military.[1]

Hispanics were more likely than those in any other racial/-ethnic group to be working (71 percent); Asian or Pacific Islanders were least likely (52 percent). American Indian/Alaskan Natives and blacks were most likely to be unemployed and looking for work.

Examination of the percentage working as related to HS&B achievement test score and to socioeconomic status (SES) shows, not surprisingly, similar patterns. With respect to both these variables, those in the highest quartiles were less likely than those in the other quartiles to be working. The differences are not in all instances statisically significant, however. The disadvantages of poor academic performance and low SES are clearly evident in the lower quartiles, where percentages of respondents who were looking for work are higher.

The percentages with participation in the military were similar across all categories, with the exception of sex.

Females and those in the lowest test score and SES quartiles were much more likely to be keeping house as their sole occupation.

Trends in Labor Force Participation. Comparison with data from the first follow-up survey of this cohort (1982) reveals that there has been a trend among males toward greater participation in the labor force. In the first follow-up survey, 74 percent of males reported labor force participation in 1980 and 77 percent in 1981. By 1984, 84 percent of the males indicated labor force participation.

For females the pattern is somewhat different. About the same proportion of women as men reported being in the labor force in 1980 and 1981 (73 percent and 76 percent respectively). By 1984, however, male participation rose to 84 percent, and female participation dropped to 72 percent. This decline is probably due to the increased proportion of young women in 1984 who reported keeping house as a sole occupation (up 7 points, from 6 to 13 percent, between 1981 and 1984).

A related trend is the decline in the proportion of females looking for work. During the first follow-up survey, 12 percent of the young women reported they were looking for work in October 1980, and 10 percent indicated they were looking for work in 1981. The most recent survey showed only 6 percent of the women looking for work in February 1984. The proportion of males looking for work has not changed markedly--8 percent in 1980 and 1981 and 7 percent in February 1984.

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[1]All differences cited in the text are statistically significant at the 95 percent confidence level. See Appendix C for a more complete discussion of the statistical properties of the survey.

The percentage of the 1980 seniors who were in an apprenticeship or other training program also dropped. In 1980 and 1981, 4 to 5 percent of males and females were in an apprenticeship or training program; by February 1984, this proportion had declined to 1 percent of the males and less than 1 percent of the females.

Postsecondary Education

In the spring of 1984, 39 percent of this population was engaged in some form of postsecondary education or training--academic education at the undergraduate or graduate level or vocational courses.

It is worth noting that there was little difference between the sexes in participation in these activities, including enrollment in vocational courses, the largest difference being a 3-point advantage for males in taking academic courses.

Those of Asian Pacific/Islander descent were far more likely than all others, and 23 points higher than the next closest group (whites), to be enrolled in undergraduate academic courses. All other groups clustered at around a quarter enrolled in these courses. Asians also had the highest rate of enrollment in vocational courses. American Indian/Alaskan Natives had the highest proportion in apprenticeships (includes government training programs).

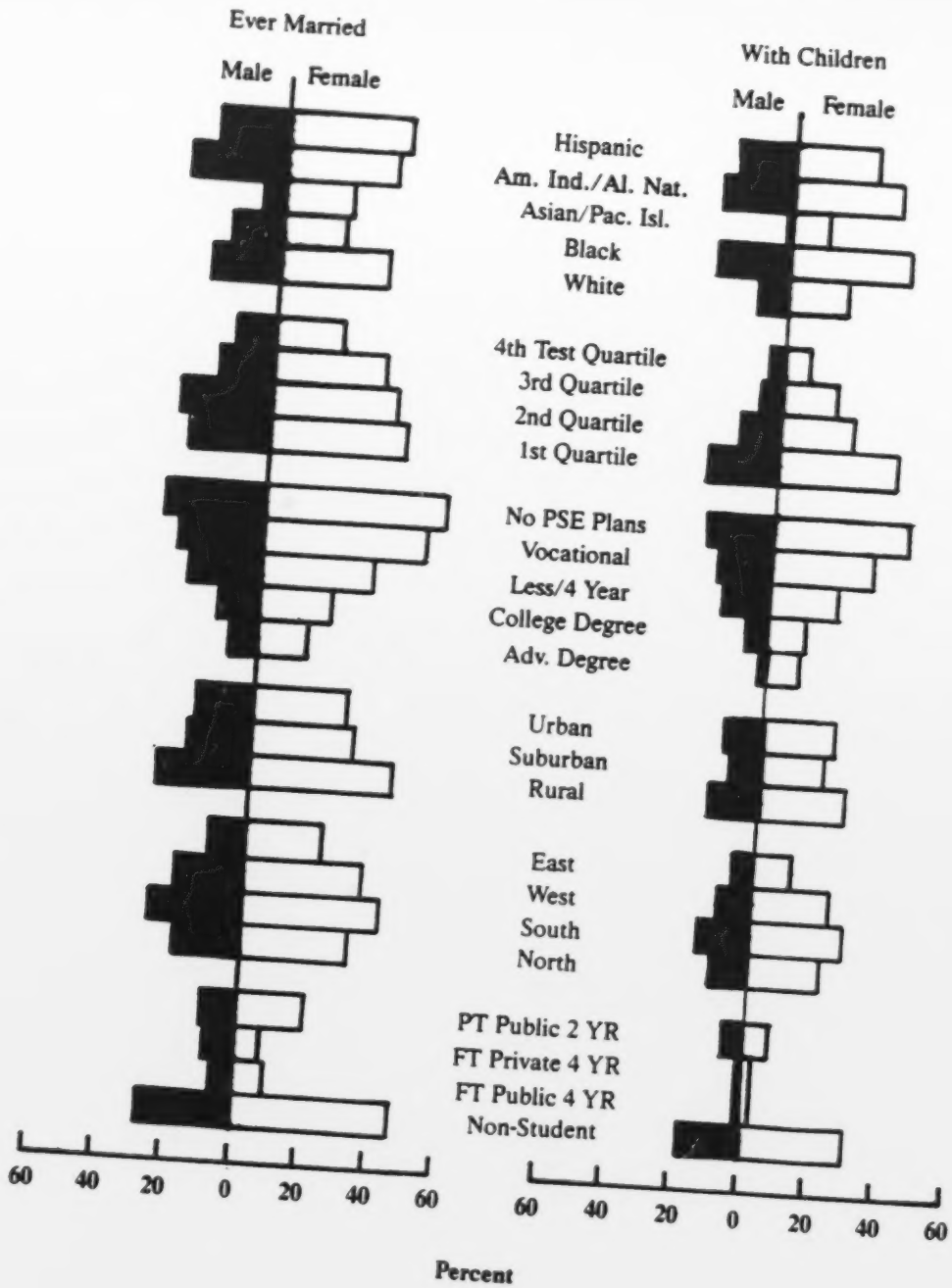
Patterns of enrollment in academic coursework within test score and SES quartiles are remarkably similar, as they were for labor force participation. Both are linear, with the percentages enrolled rising with quartile standing in the two categories. The differences between the third and fourth quartiles were especially large. Moreover, the percentages enrolled within each quartile were strikingly close for both scales.

Family Formation

By February 1984, nearly four years after high school completion, 26 percent of the class of 1980 had been married; 24 percent were married at that time, and 2 percent had been married but were then widowed, separated, or divorced. Females were far more likely than males to report having ever been married by February of 1984: 33 percent versus 20 percent (see Figure 1). A similar pattern emerges for parenting: 17 percent of the total population--but 12 percent of the males and 21 percent of the females--reported having one or more children in February 1984.

These overall differences by sex, with females far more likely than males to report having been married and having a child, are reflected in most of the categories presented in Figure 1. There are, however, some interesting differences within groups.

Fig. 1 Percentages of 1980 seniors ever married and with children



Among males, Asian/Pacific Islanders were less likely than any other racial/ethnic group to report having been married (5 percent) at any time through February 1984; among females, blacks and Asians were the least likely, with about one in five reporting marriage. Among males, American Indian/Alaskan Natives had a higher percentage (29) indicating they had ever been married than did any other racial/ethnic group. Among females, Hispanics had this distinction.

The patterns among racial/ethnic groups for having a child were similar to those for marriage. American Indian/Alaskan Natives of both sexes were among the highest in reporting having a child, and they were also among the highest in reporting marriage for both sexes. Similarly, Asian/Pacific Islanders had the lowest incidence of parenthood and they were among the lowest in reporting marriage as well. There was one important exception to this correspondence of patterns: among both males and females, all groups except blacks were more likely to report marriage than having a child. The difference is most striking for black females, who were the least likely to report marriage but among the most likely to report having any children.

Figure 1 also presents marriage and parental status for members of the population classified according to their education-involvement and performance. The relationship between two of these educational measures--achievement test score and plans for postsecondary education--and reports of marriage and having children are almost always negatively related for both sexes: the higher the test score and the level of educational aspiration, the lower the likelihood of marriage and children.

Data on the third educational variable--postsecondary educational involvement and type of institution attended--shows that among both males and females educational activity leads to postponement of family formation. Non-students were most likely to report marriage and children. However, it is worth noting that full-time students do not completely forgo marriage (from 6 to 9 percent of male full-time students and 9 to 17 percent of female full-time students reported marriage), though fewer reported mixing parenthood with postsecondary education.

Figure 1 also includes two geographic variables--region of the country and urbanicity of the respondent's place of residence in 1980. Generally, persons of both sexes who during high school resided in the South or in rural areas were somewhat more likely to report marriage and children, while those from the East were less likely to do so.

Table 2 presents several breakdowns of survey responses concerning expected family size. Nearly 90 percent of the class of 1980 reported that they expected to have one or more children. A plurality (48 percent) expected to limit their families to two children, but about a third (34 percent) of the population expected to have three or more. Only 8 percent said that they expected to have a single child.

Table 2. Percentages of 1980 high school seniors with specified background characteristics who expected eventually to have the number of children specified: spring 1984.

Characteristics	Number of children expected			
	No children	One child	Two children	Three or more children
Total population	11	8	48	34
Sex:				
Male	12	6	47	34
Female	9	9	48	34
Race/ethnicity:				
Hispanic	11	9	44	36
Black	10	14	45	32
White	11	6	49	34
H.S. test quartile:				
4th quartile high	10	4	45	41
3rd quartile	9	5	47	38
2nd quartile	11	9	49	32
1st quartile low	12	12	47	28
H.S. geographic region:				
East	11	7	45	36
North	11	5	47	37
South	10	10	52	28
West	11	7	46	37
SES quartile:				
4th quartile high	10	5	46	39
3rd quartile	9	7	48	36
2nd quartile	12	8	46	34
1st quartile low	11	11	48	30
Family size:*				
1, 2 or 3	12	9	51	28
4	10	8	55	27
5	10	7	48	35
6	10	8	47	35
7	11	8	42	40
8 or more	11	7	41	42

*"Family size" refers to respondent's family size at the time of the base year survey (1980).

Males were more likely than females to expect to have no children, and females were more likely than males to expect to have a single child. The sexes reported comparable expectations in the other two categories.

Other data in table 2 show the relationships between the respondents' test quartile, geographic region, and SES quartile, on the one hand, and expected size of their family of procreation. In all of these breakouts, it is clear that a 2-child family is the most popular. Most of the other comparisons one might make show differences too small to be of interest even though some are statistically significant.

It is interesting to observe that although a 2-child family is the most popular regardless of the size of the family of origin, respondents from a large family of origin are more likely than those from a small family to expect to create a 3-child or larger family.

Trends in Family Formation. The number of 1980 seniors who have married and had children increased dramatically during the two-year period between surveys. Interestingly, the rate of growth in family formation activities was higher for males than females. In 1982, 8 percent of the males indicated they had married, and by 1984 this proportion had increased to 20 percent. Among females, 16 percent had been married by the time of the first follow-up survey and 33 percent by the time of the second follow-up survey. Hence, by 1984, twice as many females had ever married compared to two-and-one-half times as many males. (The data presented in this paragraph are not shown in tables.)

There was also tremendous growth in the number of 1980 seniors having children, again with the rate of growth higher for males than females. During the first follow-up, 3 percent of males reported having children, and by the second follow-up, the proportion had increased fourfold to 13 percent. In 1982, 8 percent of females were mothers, compared with 21 percent in 1984 (an increase of two and one-half times).

The pattern that emerges is that female members of the senior cohort began their family formation activities earlier than males. During the two years between surveys, males began to catch up with females in marriage and parental status, although they still remained behind in absolute numbers.

Military Service

As shown in table 3, 7 percent of the class of 1980 had served in the military on active duty between the time they left high school and spring of 1984. Not surprisingly, males were far more likely than females to have had this experience. Among males, blacks were more likely to have served than any other racial/ethnic group. Among females, American Indians/Alaskan

Natives had this position. The greatest regional discrepancy between the sexes occurred among those from the South: southern males were most likely and southern females least likely to have been in the military.

Table 3. Percentages of 1980 high school seniors with specified background characteristics who were ever in the military, by sex: spring 1984.

Characteristics	Total	Male	Female
Total population	7	12	2
Race/ethnicity:			
Hispanic	5	9	1
Am.Ind./Al.Nat.	9	11	7
Asian/Pac.Isl.	5	10	2
Black	10	18	2
White	6	11	2
H.S. geographic region:			
East	7	10	3
North	7	11	2
South	8	14	1
West	6	10	3

III. EDUCATION

The movement from secondary to postsecondary education among members of the class of 1980, the nature of the postsecondary education experience, and financing for that education--these issues have from the beginning been major focuses of High School and Beyond. This chapter examines this population's participation in postsecondary education between 1980 and 1983, their major fields of study, the educational credentials acquired by them, their expectations concerning education after college, and their methods for financing postsecondary education.

Participation and Persistence in Postsecondary Education: 1980-1983

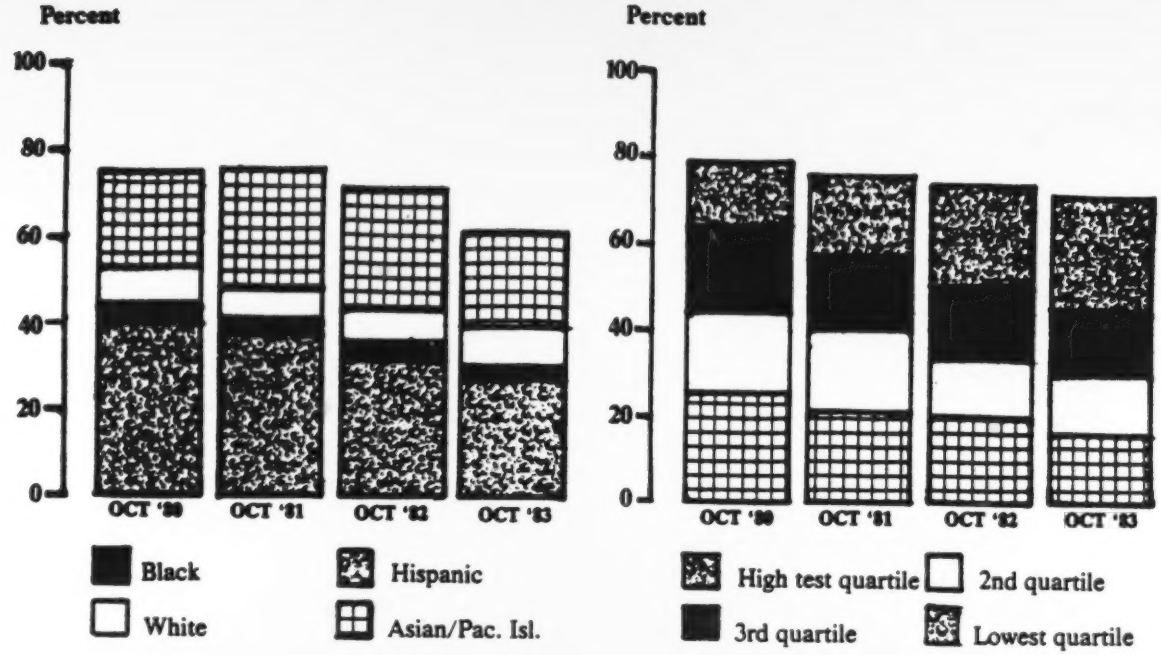
Just over half of the class of 1980 enrolled in some form of postsecondary education immediately after completing high school--that is, by the fall of 1980. There was a steady decline in enrollment over the next three years, until, by the fall of 1983, the proportion was just under two-fifths. Some of this decline is attributable to program and degree completion, some to dropping out. There is in addition, no doubt, more decline than is apparent in these data, decline masked by the additions to enrollment of people who entered school late.

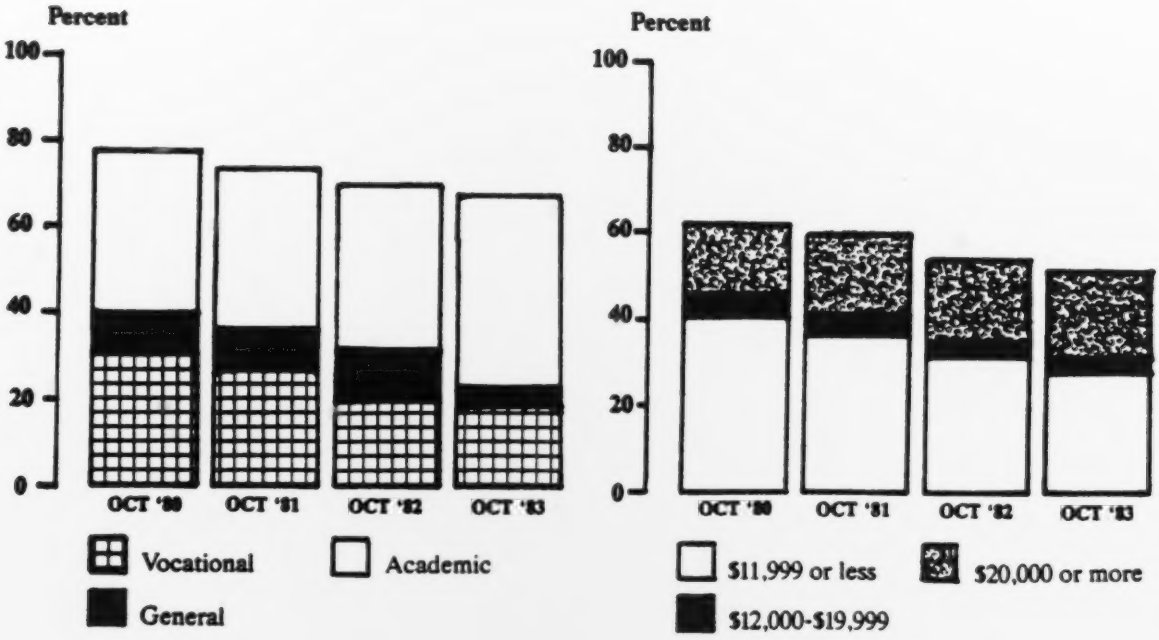
Figure 2 displays the enrollment of various sub-populations at 4 different time points. These data show dramatic differences in the rate of enrollment of Asian/Pacific Islanders compared to other groups. Those of Asian/Pacific Islander descent had the highest rates of enrollment at all four time points, and Hispanics generally had the lowest rates. There were striking differences between American Indian/Alaskan Natives and Asians: they are separated by 38 percentage points in 1980, 33 percentage points in 1983.

Regarding change over time, the decline appears to be fairly constant, at about 10 percentage points for most groups; for Asian/Pacific Islanders it was 14 percent. However, because late entrants have not been accounted for, it is possible that the relative decline over time is not the same for all groups.

There are noteworthy relationships between each of the educational variables presented in Figure 2 and enrollment. Both test performance and high school program are related in the expected direction to enrollment. Rates of enrollment increase with test score quartile and with program (moving from vocational to general to academic). For test performance the linear progression breaks down, however, in rates of decline over the three years. Those in the third quartile showed the greatest decline (19 points versus 9, 12, and 8 for quartiles one, two, and four). Although not shown in Figure 2, there appeared to be a powerful relationship between enrollment and type of high school attended. Those from private schools were much more likely than those from public schools to be enrolled, with differences ranging from 20 to 24

Fig. 2 Percentage of 19[illegible] seniors enrolled in postsecondary education at specified time points





percentage points over the four time points. In October 1980, 69 percent of private school students had entered postsecondary education, and by October 1983, this percentage had dropped to 61. The corresponding percentages for public school graduates were 49 and 37.

The role of family resources in postsecondary enrollment is demonstrated by the degree to which enrollment increases with income. The differences between the highest and lowest income groups range from 21 to 24 percentage points across the four time points. (Income is the family income reported in 1980. High is $20,000 or more; middle is $12,000-$19,999; and low is $11,999 or less). Most of this (16 to 21 points) is accounted for by the differences between the two groups from families with incomes under $20,000 on the one hand and those making $20,000 or more on the other. Furthermore, it is only in the latter group that there was a consistent trend for majorities to report postsecondary enrollment.

Overall, females were more likely than males to be enrolled in postsecondary education in 1980, but by 1983 the sexes had similar rates of enrollment (not shown in Figure 2).

Major Fields of Study in Postsecondary Education

Business as a field of postsecondary study claimed by far the largest proportion of the class of 1980 in October of 1983, with nearly a quarter of those enrolled majoring in this field (see table 4). At the other extreme were pre-professional programs, with only 1 percent of those enrolled.

The greatest differences between the sexes occurred in the social sciences, education, health, engineering, and vocational training, with most of the differences following traditional sex role expectations. However, there was virtually no difference between males and females in two traditionally male areas--business and computer science.

Among all racial/ethnic groups shown, business was the most popular choice. However, about as many Asian/Pacific Islander students chose humanities as business. This group was somewhat less likely than others to select education as a field of study. Blacks were a little more inclined than other groups to study computer science.

Test score performance had a positive, linear relationship with only a few fields of study--namely biological sciences, social sciences, and engineering. Also, students who scored in the highest test quartile were more likely to enter physical science than students in the other three quartiles. The relationships between test score on the one hand and health, business, and vocational training on the other are inverse: the higher the test score quartile, the lower the proportion that chose these fields.

Table 4. Percentages of 1980 high school seniors with specified background characteristics who were majoring in specified fields of study: October 1983.

Characteristics	Humanities	Biolog. science	Physical science	Social science	Business	Educat.	Engin.	Computer science	Health	Pre-professional	Vocat.	Other fields
Total population	15	5	3	12	24	9	8	6	7	1	11	3
Sex:												
Male	15	5	4	10	24	4	13	6	2	1	14	4
Female	14	4	2	14	23	14	2	5	11	1	7	3
Race/ethnicity:												
Hispanic	11	2	2	10	24	9	9	7	9	0	12	6
Am.Ind./Al.Nat.	16	14	0	4	24	8	7	6	1	0	15	5
Asian/Pac.Isl.	19	10	1	13	10	2	11	5	10	0	8	2
Black	13	2	3	10	27	6	6	11	9	2	7	5
White	15	5	3	12	24	10	8	5	6	1	11	3
H.S. test quartile:												
4th quartile high	14	5	5	16	19	7	12	5	6	1	8	2
3rd quartile	17	5	2	9	24	10	6	7	0	0	11	4
2nd quartile	11	2	2	0	29	14	4	7	0	0	12	4
1st quartile low	14	0	0	5	31	10	1	7	10	0	16	6
SES quartile:												
4th quartile high	17	5	4	16	21	6	9	4	5	1	9	2
3rd quartile	14	5	2	11	25	11	0	6	6	1	10	5
2nd quartile	11	5	2	7	23	12	7	9	10	0	13	4
1st quartile low	13	2	2	9	20	12	5	6	9	0	10	4
PSE type and status (10/83):												
Part-time priv. 4-yr.	25	1	0	5	30	4	9	4	4	5	15	1
Part-time pub. 4-yr.	6	2	2	10	36	9	7	10	6	2	0	2
Part-time pub. 2-yr.	7	2	1	5	37	6	5	11	6	0	19	4
Part-time other	4	0	1	0	55	1	2	20	12	0	2	5
Full-time priv. 4-yr.	21	5	5	19	19	0	0	5	6	1	6	1
Full-time pub. 4-yr.	15	5	4	12	22	12	9	5	5	1	9	4
Full-time pub. 2-yr.	11	5	1	5	25	6	7	0	14	0	17	6
Full-time other	16	5	0	5	16	2	6	6	14	0	25	10

Note: Table includes all respondents enrolled in postsecondary education in October 1983.

The relationship between socioeconomic status and choice of major field is less clear and consistent. The humanities and the biological, physical, and social sciences drew their largest proportions from the highest SES quartile; business, education, computer science, and health drew their smallest proportions from this quartile. The only clear, if not striking, linear progression was for engineering.

Some fields of study were more prevalent for certain types of schools and statuses. For instance, among students studying humanties, the largest group attended 4-year private schools. The same was true for social sciences. Business was a little more likely to be chosen by part-time students than full-time students. Students in 4-year public institutions were more likely than students in other kinds of institutions to choose education. Part-time students were also more likely than full-time students to select computer science.

Educational Credentials

Between March 1982 and February 1984, only 14 percent of the seniors obtained vocational1, 2-year, or 4-year degrees. This in part reflects the timing of the survey, which occurred in the middle of the fourth year after high school. It is also important to recognize that, in addition to those receiving degrees, 16 percent of the seniors obtained a license or certificate of some kind. Table 5 presents data on those who obtained degrees of the three major types.

A large proportion of this population--8 percent--reported that they had obtained 4-year degrees less than four full years after completing high school. In part this may reflect the fact that the survey took place between February and July, and some respondents may have reported graduation before it actually occurred. It is not surprising that those who had the highest grades--the A students--had by far the highest percentage of students in this category. Nor is it surprising that this group was surpassed by the three high school grade groups immediately below it in obtaining 2-year degrees, since their slightly lower grades go hand-in-hand with their slightly lower educational attainment.

The acquisition of educational credentials by members of this population was also consistent with the high school programs in which they were enrolled. Academic program students had the highest percentage who received 4-year college degrees by February 1984. Those in academic programs were also more likely than students in the other two programs to have obtained 2-year degrees. Despite the fact that vocational program students took more vocational courses than did academic or general students, they did not surpass the other students in the percentage who obtained a vocational credential. In fact, for most vocational program students, the high school diploma was their terminal credential.

1Strictly speaking, completers of vocational programs do not receive a degree as such but some other credential that signifies program completion.

Table 5. Percentages of 1980 high school seniors with selected background characteristics by educational degree : spring 1984.

Characteristics	Vocational degree*	2-year degree	4-year degree
Total population	1	5	8
H.S. grades:			
A, 90-100	1	4	25
A & B, 85-89	2	8	11
B, 80-84	2	6	7
B & C, 75-79	2	5	3
C, 70-74	1	2	1
C & D, 65-69	0	1	1
D, 60-64	0	0	4
H.S. program:			
General	2	4	4
Academic	1	7	16
Vocational	1	4	1
H.S. type:			
Public	1	5	7
Total private	1	5	15
H.S. census region:			
New England	0	6	13
Mid-Atlantic	1	5	11
East North Central	1	5	8
West North Central	4	5	10
South Atlantic	1	5	7
East South Central	1	3	6
West South Central	1	5	6
Mountain	0	2	3
Pacific	2	6	5
SES quartile:			
4th quartile high	1	7	18
3rd quartile	2	6	9
2nd quartile	2	5	3
1st quartile low	1	3	2
Tuition--1st PSE institution:			
Low tuition	2	12	13
High tuition	1	5	30

*Strictly speaking, completers of vocational programs do not receive a degree as such but some other credential that signifies program completion.

Attending a private high school, having high grades, and being in the academic program was also related to obtaining a 4-year college degree. Those from private schools were 8 percentage points more likely than their public school counterparts to have received a 4-year degree by February 1984. Those who attended high schools in the New England and Mid-Atlantic states were more likely to have achieved this distinction; those from the Mountain states were least likely to have done so. Students from schools in the West North Central states were far more likely than those from all other regions to have obtained a vocational program credential.

The largest proportion of 4-year degrees was obtained by those in the highest SES quartile and by students who attended high-cost postsecondary institutions (tuition greater than $2,200). Cost may have been more of a factor for those obtaining 2-year degrees: the larger proportion in this category attended low-cost institutions.

Expectations Concerning Graduate or Professional Education

Fully two-fifths of the 1980 seniors who were enrolled in college in October 1983 reported that they planned to go on to graduate or professional school after college graduation. Table 6 presents data on the plans of those in selected fields of study.

Students in the biological sciences were most likely to report plans for postgraduate education: students in business were least likely to do so. There was no difference between males and females overall on this point, but some differences between the sexes do emerge within selected fields of study. The largest differences were in engineering, where more males planned graduate school (by 10 percentage points), and in education, where more females intended to take graduate courses (by 9 percentage points).

Among racial/ethnic groups, blacks were most likely to report having plans for postgraduate education (not shown in table).

There are strong relationships in the expected direction by test score performance and socioeconomic status: those in the top quartile on each of these measures were far more likely than others to report plans for graduate or professional school, both overall and in all of the specific fields except biology. Table 6 shows that among full-time students those in private institutions were more likely than those in public institutions to plan to enroll in graduate or professional school, both overall and in most fields.

Financing of Postsecondary Education

The members of the class of 1980, and their families, have made a major investment in postsecondary education. Paying for postsecondary education through one's own earnings was the form of financing reported by most (65 percent) of those who were enrolled in 4-year colleges and universities in October 1983 (not shown in tables). The next most frequently cited source of support was

Table 6. Percentages of 1980 high school seniors attending college in October 1983 in the indicated fields of study and with specified background characteristics* who expected to enter graduate school.

Characteristics	Total	Humanities	Biological sciences	Physical sciences	Social sciences	Business	Education	Engineering
Total population	40	39	65	55	60	34	37	51
Sex:								
Male	41	36	62	54	64	36	30	52
Female	40	42	68	58	58	32	39	42
H.S. test quartile:								
4th quartile high	53	57	81	57	65	46	44	56
3rd quartile	33	28	57	Low-N**	53	27	32	47
2nd quartile	26	23	Low-N	Low-N	57	21	30	44
1st quartile low	22	17	Low-N	Low-N	56	17	38	Low-N
SES quartile:								
4th quartile high	51	48	63	63	60	46	51	54
3rd quartile	35	32	58	Low-N	56	30	39	58
2nd quartile	29	27	Low-N	Low-N	38	16	33	45
1st quartile low	30	27	69	Low-N	53	32	16	43
PSE type and status (10/83):								
Full-time priv. 4-yr	53	47	80	73	73	38	34	54
Full-time pub. 4-yr.	42	40	62	40	56	39	39	52

*This table includes students attending two- and four-year colleges and universities.

**Low-N means cell size is 25 or less.

parental contributions (at 56 percent). However, many of those in 4-year schools received financial aid through either grants (42 percent) or loans (36 percent). These percentages exceed 100 because students could name more than one source of support. Figure 3 and tables 7 and 8 in this section present information on the uses of these four sources for financing postsecondary education.

Figure 3 illustrates the uses of the various forms of financing by students in schools with different financial demands and from families with different levels of resources. High tuition in Figure 3 is more than $2,200 a year and low tuition is $2,200 or less. Family income refers to 1980 income, high is $20,000 or more; middle is $12,000-$19,000, and low is less than $12,000 a year.

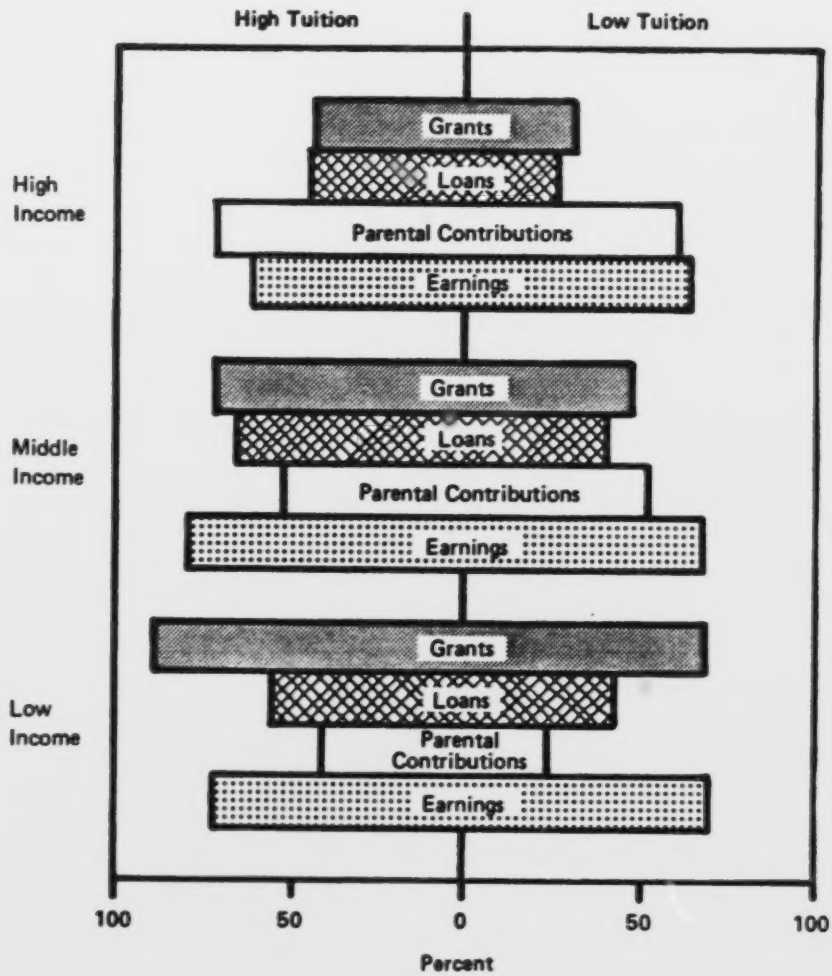
As might be expected, students from low income families who were themselves enrolled in high tuition schools had the highest rate of use for grants (90 percent), those from high income families in low tuition schools had the lowest, by 60 percentage points. Loans were used most often by those from middle income families in high tuition schools (66 percent), least often by those from high income families in low tuition schools (25 percent). Parental contributions decreased with income and tuition level, from 72 percent for high income/high tuition to 24 percent for low income/low tuition.

Although the use of most forms of financing increased with tuition, there was one departure from this pattern. The level of tuition made no difference in the percentage of middle-income families contributing to their children's education: 51 percent of such students in both types of schools reported parental contributions in financing education. It is possible that the amount contributed differed, but that would have to be determined from further analysis.

The survey instrument contained several questions that are usually asked of financial aid recipients to determine whether they are "independent" of parental support. The results are reported in Table 7. Independent students are defined as those who received less than $750 in parental support, were not claimed as exemptions on their parents' income tax, and spent less than 45 days during the year living at home.

Eleven percent of all students (not shown in Table 7) in 4-year institutions met the requirements of this definition in October 1983. Blacks had the highest rate of independent classification (14 percent), American Indian/Alaskan Natives the lowest (8 percent). Students in the second highest test score quartile were most likely to to be independent; there was little difference among the other quartiles in the percent of students who were independent. As might be expected, independent classifications decline as tuition and, for the most part, family income rise. The relationship between independence on the one hand and type of postsecondary institution and student status on the other also follows expectations: both part- and full-time students enrolled in public

Figure 3.-- Percentages of students in 4-year colleges and universities financing their education through grants, loans, parental contributions, and earnings, by tuition level and family income: October 1983



schools were more likely than their private school counterparts to be classified as independent in October 1983.

Table 7. Percentages of 1980 high school seniors with specified background characteristics and who were attending a four-year college and university in October 1983 who were classified as "independent students" for student financial aid, by sex.

Characteristics	Total	Males	Females
Race/ethnicity:			
Hispanic	12	10	15
Am.Ind./Al.Nat.	8	Low-N*	Low-N
Asian/Pac.Isl.	11	10	12
Black	14	11	16
White	11	11	12
H.S. test quartile:			
4th quartile high	9	8	11
3rd quartile	14	14	15
2nd quartile	11	10	12
1st quartile low	12	11	12
Family income:			
$6,999 or less	32	21	38
$7,000-11,999	20	18	21
$12,000-15,999	10	10	11
$16,000-19,999	13	11	14
$20,000-24,999	11	9	14
$25,000-37,999	11	11	10
$38,000 or more	5	5	5
Tuition--1st PSE institution:			
Low tuition	15	14	16
High tuition	4	4	5
PSE type and status (10/83):			
Part-time priv.4-yr	4	1	6
Part-time pub. 4-yr	26	28	25
Full-time priv.4-yr	5	6	5
Full-time pub. 4-yr	13	11	15

*Low-N means cell size is 25 or less.

Perhaps contrary to expectations, females were more likely than their male counterparts to be classified as independent. This pattern held for all racial/ethnic and test quartile groups, for all but the two highest family income groups, and for both institutional tuition level groups. This might be explained by females' higher rate of marriage and the fact that sizable proportions of married women were attending school.

Table 8 allows comparisons of pattern of financial aid use for students classified as independent or dependent in their responsibilities for financing postsecondary education. Because the proportion of students who were independent and the proportion who attended high tuition schools were relatively small, sampling errors for these categories were high enough to render some differences nonsignificant. After allowing for sampling error, the following conclusions were evident: except for private school attenders, independent students were more likely than dependent students to receive grants (including scholarship). Among students attending low tuition schools and those attending 4-year public institutions independent students were more likely than dependent students to use loans to finance their schooling. Independant and dependent students were mostly similar with respect to the proportion who made use of their own earnings.

Table 8 also shows that, as might be expected, dependent students in high tuition schools were more likely than those in low tuition schools to have used grants, loans, and parental contributions to finance postsecondary education. This does not hold, however, for the use of the dependent students' own earnings, where those in low tuition schools and those in high tuition schools were equally likely to have contributed directly to paying for postsecondary education. Due to the relatively small number of independent students, differences among independent students attending high and low tuition schools were not significant. Dependent students in private schools followed the pattern that might be expected: they were more likely than their public school counterparts to report using all four forms of financing for postsecondary education. Differences among independent students in private schools vs. public schools, however, were not significant.

Trends In Financing Postsecondary Education. Financing postsecondary education was covered in the first follow-up survey report, Two Years after High School: A Capsule Description of 1980 Seniors. Comparing results of the first and second follow-up surveys reveals a clear trend toward greater use of grants, loans, and the students' own earnings; higher percentages of 1980 seniors in all income-tuition categories reported use of these sources of financing during the second follow-up survey. (Parental contributions was not a category in the first follow-up report.)

There was considerable consistency between the first and second follow-up surveys in the types of students reporting high and moderate use of grants, loans, and earnings to finance their education. In both 1982 and 1984, the highest percentages of use of grants, loans, and earnings were among those students from low income families who were attending high tuition schools. The category with the next highest percentages was moderate income students attending low tuition schools. The category with the lowest percentage of use of grants, loans, and earnings was high income students attending low tuition schools. The main difference between the two surveys was the increase in all income-tuition categories of the proportion using these various means to finance their education.

Table 8. Percentages of dependent and independent students in 4-year colleges or universities and with specified background characteristics who used the indicated sources for financing their education: October 1983.

Characteristics	Independent students				Dependent students			
	Grant	Loan	Parental Contributions	Earnings	Grant	Loan	Parental Contributions	Earnings
Tuition--1st PSE institution:								
Low Tuition	56	41	16	68	34	28	62	65
High Tuition	62	52	19	65	50	47	66	65
PSE type and status (10/83):								
Full-time priv. 4-yr.	59	47	21	72	54	50	68	68
Full-time pub. 4-yr.	63	47	16	66	35	30	64	63

IV. LABOR FORCE PARTICIPATION

The second follow-up survey of the class of 1980 looked at a number of aspects of their labor force participation four years after high school. This chapter presents data on the employment status of these young adults, including combinations of working with schooling, the types of jobs held, and the wages earned.

Employment Status

Nearly three-fourths of the class of 1980 was employed at least part-time in October 1983 (see table 9). Part-time students had the highest rate of employment (85 percent), higher even than non-students; full-time students in private 4-year colleges had the lowest (56 percent). The employment rate among non-students, part-time students, and full-time students was about 3 to 5 percentage points higher in 1983 than it was in 1981.

Males had higher rates of employment than females, both overall and as non-students and part-time students, but there was little difference between males and females in rates of employment when both were enrolled full-time in postsecondary education.

Whites were more likely than persons in other racial/ethnic groups to be employed--overall, and among non-students and part-time students. Among full-time students, however, Hispanics and American Indians were most likely to carry the additional burden of employment.

Table 9 also shows the relationship between employment rates and type of community of most recent residence. Those from very large cities had the highest rates of employment, across all student categories. For the total population and non-students, those from very large cities had the lowest employment rates. Among students of all types, there was considerable variety in employment by type of community. As might be expected, the 1982 unemployment rate for the county in which the respondent's high school was located was related to likelihood of employment in 1983. For the total population, and for non-students and part-time students, there is an inverse relationship: the higher the county unemployment rate, the lower this population's employment rate. For full-time students, with their different orientation to the labor force, the relationship is less clear; and, in fact, employment rates for full-time students in private 4-year colleges rise with county unemployment rate. Those who reported having a handicap or participation in programs for the handicapped generally had lower rates of employment than others.

Types of Jobs

Clerical work was the leading occupation among both non-students and part-time students in October 1983 (see table 10). Clerical work also occupied a large proportion of full-time

Table 9. Percentages of 1980 high school seniors with specified student status and background characteristics who were gainfully employed in October.

Characteristics	Employed	Not student	Part-time student	Full-time student	Full-time student priv. 4-yr.	Full-time student pub. 4-yr.
Total population	74	80	85	60	56	60
Sex:						
Male	77	86	88	60	55	59
Female	71	74	82	60	56	61
Race/ethnicity:						
Hispanic	72	73	75	67	64	64
Am.Ind./Al.Nat.	71	71	Low-N*	68	Low-N	Low-N
Asian/Pac.Isl.	62	76	67	54	44	56
Black	64	66	78	53	59	51
White	76	83	87	61	56	61
H.S. program:						
General	76	81	89	58	53	56
Academic	69	81	80	60	57	60
Vocational	77	78	86	62	52	64
Community type:						
Rural	74	78	91	54	46	57
Small city (<50,000)	73	82	82	54	48	57
City (50,000-100,000)	73	79	84	62	58	61
Medium city suburb	79	84	93	58	38	66
City (100,000-500,000)	73	79	83	63	63	63
Large city suburb	76	80	72	71	72	72
Very large city	69	74	86	58	58	54
Very lg city suburb	82	84	97	74	77	71
Military base	78	80	Low-N	Low-N	Low-N	Low-N
Handicap program:						
Handicap program	69	73	83	58	34	60
Consistent handic	67	75	Low-N	46	Low-N	56
Inconsistent hand	73	76	84	62	54	61
Not handicapped	75	81	86	61	58	60
County unemployment rate--1982:						
4th quartile high	73	78	81	59	63	57
3rd quartile	72	78	85	57	56	57
2nd quartile	75	80	86	63	57	62
1st quartile low	75	83	87	61	51	62

*Low-N means cell size is 25 or less

students at that point, but they were about equally likely to be found in professional/technical or service jobs. Sales, transportation, and farming had the lowest rates of participation by both students and non-students.

The jobs of the fully employed members of the class of 1980 follow traditional sexual divisions in many respects. Females in all categories were more likely than males to be in clerical jobs, with the differences between the sexes ranging from 26 to 48 percentage points depending on the category. Females who were part-time students showed both the greatest likelihood of being in clerical jobs (63 percent) and the greatest discrepancy from males (a difference of 48 points). Female non-students and full-time students were also much more likely than males to have full-time jobs in the service sector. Males in all categories were much more likely to be employed in the crafts, and both non-student and full-time-student males were much more likely to be working as laborers.

Among full-time white students who were also gainfully employed, the largest percentage (22) were in the professional technical field. Among their black and Hispanic counterparts, clerical jobs were most common, accounting for 46 percent and 20 percent of the jobs held by blacks and Hispanics, respectively.

Among non-students, clerical was the most common field for Hispanics, blacks, and whites.

Earnings

Figure 4 presents information on the earnings of non-student full-time workers (defined here as working at least 30 hours a week) in October 1983. Overall, 71 percent of the non-student population was working full-time, for an average hourly wage of $5.02.

Males were far more likely than females (by about 18 percentage points) to be working full-time, and they had an hourly wage advantage of 41 cents.

Whites had the highest rates of full-time employment, blacks the lowest (by 19 percentage points), and they also earned the lowest hourly wage--$4.60.

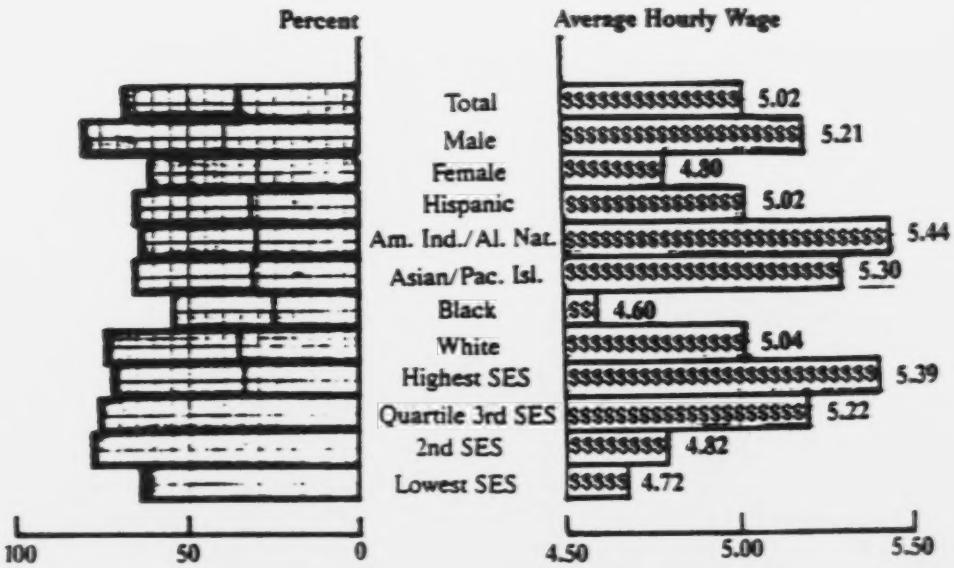
The relationship between family socioeconomic status and earnings was positive: the higher the SES of the family of origin, the higher the young person's average hourly wage in 1983. This relationship did not hold for employment rates: those in the middle SES quartiles had the highest employment rates.

Table 10. Percentages of 1980 high school seniors classified by sex, race/ethnicity, and student status, who were employed in the specified job categories in October 1983.

Characteristics	Total	Sex		Race/ethnicity		
		Male	Female	Hispanic	Black	White
Non-student:						
Professional/technical	6	6	7	4	3	7
Administrative/management	7	7	6	8	3	7
Sales	1	1	2	2	0	1
Clerical	27	7	49	31	27	27
Craftsman	14	25	3	11	9	15
Operators	13	15	10	13	17	12
Transport	4	6	0	5	4	3
Laborers	10	16	2	9	13	9
Farmers	3	5	0	1	0	3
Service	16	13	21	16	24	15
Part-time student:						
Professional/technical	12	13	10	14	8	12
Administrative/management	8	9	6	14	3	8
Sales	1	1	0	0	0	1
Clerical	41	15	63	44	53	39
Craftsman	10	10	2	2	5	11
Full-time student:						
Professional/technical	21	21	19	15	14	22
Administrative/management	7	9	5	3	5	7
Sales	2	2	1	14	1	1
Clerical	20	11	37	20	46	17
Craftsman	8	12	2	6	6	9
Operators	8	11	5	15	1	9
Transport	2	3	0	3	0	2
Laborers	11	15	1	5	5	11
Farmers	2	2	0	0	0	2
Service	20	15	30	10	22	20

*This table includes persons working 35 or more hours per week.

Fig. 4 Percentages of 1980 seniors who were not students and were working 30 or more hours a week, and their average hourly wage: Spring 1984



V. EXPERIENCES AND ATTITUDES

By the time of the second follow-up survey, the class of 1980 had had time to amass considerable experience beyond high school. Some had attained or were approaching completion of postsecondary degrees. Some had accumulated four years of full-time experience in the work force. Some had begun families of their own, some had done more than one, or even all, of these things. Previous chapters have covered these major life activities. This chapter presents information on selected additional experiences of the class of 1980 in an increasingly technological society and as adult citizens of that society--that is, on experiences with computers and on voting behavior. It also examines the life goals of these young adults, comparing their 1984 responses to those provided four years earlier.

Use of Electronic Equipment

The computer terminal is the only electronic device regularly encountered in the classroom or workplace that had been used by a majority of the senior cohort by the spring of 1984 (see table 11). From 22 to 29 percent also reported use of other major electronic devices.

Males and females had comparable exposure to mainframe computers four years after high school. Females were somewhat more likely to have had experience with computer terminals and word processors, males with minicomputers and, by 10 points, with microcomputers.

Asian Pacific/Islanders were most likely of all the racial/enthic group to have had experience with each of the specified types of electronic equipment; American Indian/Alaskan Natives and Hispanics generally were less likely to have had this experience.

Higher test performance, being in the academic program in high school and higher family income were all associated with greater use of all kinds of electronic equipment. It is noteworthy that a higher percentage of academic program students than vocational program students indicated familiarity with word processors.

Enrollment in postsecondary education also was related to experience with computers. In general, non-students reported exposure to computers at only half the rate of students and were the least likely to have had experience with any kind of electronic device, even those, such as word processors, that are encountered everywhere in the workplace.

Table 12 presents information on the experiences of the class of 1980 with types of software packages. Overall, the rates of exposure to software were much lower than those for hardware. The highest reported rate of use was for word processing software. This was true for the population as a whole, for both males and females, and for those in virtually all student statuses and in all types of

Table 11. Percentages of 1980 high school seniors with specified background characteristics who had ever used the types of computer equipment specified: spring 1984.

Characteristics	Computer terminal	Micro-computer	Mini-computer	Mainframe	Word processor
Total population	56	26	22	29	26
Sex:					
Male	54	31	24	29	24
Female	58	21	20	29	27
Race/ethnicity:					
Hispanic	45	18	19	25	21
Am.Ind./Al.Nat.	46	18	13	22	19
Asian/Pac.Isl.	67	36	28	35	30
Black	48	18	23	24	27
White	58	28	22	30	26
Other	50	16	15	30	23
H.S. test quartile:					
4th quartile high	81	46	32	46	37
3rd quartile	64	29	25	32	27
2nd quartile	49	20	19	26	22
1st quartile low	31	10	14	16	18
H.S. program:					
General	45	19	19	24	19
Academic	74	39	28	40	32
Vocational	46	18	20	24	25
Family income (12th Grade):					
$11,999 or less	43	18	18	25	22
$12,000-19,999	51	23	22	26	23
$20,000 or more	65	33	25	35	29
PSE type and status (2/84):					
Part-time priv. 4-yr.	92	39	23	39	37
Part-time pub. 4-yr.	72	37	37	40	39
Part-time pub. 2-yr.	71	32	27	37	32
Part-time other	65	23	16	41	34
Full-time priv. 4-yr.	83	39	28	43	41
Full-time pub. 4-yr.	83	47	33	46	35
Full-time pub. 2-yr.	65	48	33	39	27
Full-time other	58	31	30	37	26
Non-student	41	16	16	21	20

Table 12. Percentages of 1980 high school seniors with specified background characteristics who had ever used the types of computer software package specified: spring 1984.

Characteristics	Statistical packages	Business applications	Word processing	Database software	Educational software
Total population	6	11	13	6	10
Sex:					
Male	7	11	13	6	10
Female	4	10	13	5	9
PSE type and status (2/84):					
Part-time priv. 4-yr.	8	14	23	10	7
Part-time pub. 4-yr.	10	10	18	12	13
Part-time pub. 2-yr.	4	15	17	8	15
Part-time other	2	12	6	1	12
Full-time priv. 4-yr.	16	16	23	8	15
Full-time pub. 4-yr.	13	14	19	7	19
Full-time pub. 2-yr.	7	9	22	6	19
Full-time other	5	13	8	12	9
Non-student	2	8	8	4	5

postsecondary institutions. Sex differences were minimal. The largest difference was in the use of statistical packages, where males led by 3 percentage points. Not being in school was generally associated with lower reporting of computer software use, as it was with lower rates of use of electronic equipment.

Voting Behavior

Two-thirds of the class of 1980 had registered to vote by spring of 1984 (see table 13). Blacks had the highest rates of voter registration in 1984, Hispanics the lowest. Males and females were, on the whole, equally likely to have registered.

Those who were in academic programs in high school had the highest rates of voter registration in 1984; those in general and vocational programs had rates similar to one another, generally about 13 percentage points lower. The tendency of academic program students to register to vote at a higher rate was more prevalent among whites. Among Hispanics and blacks, there were smaller differences between those coming from separate high school programs. The influence of educational activity on registering to vote is also apparent in the difference between those enrolled in various types of postsecondary institutions: those enrolled in 4-year schools had the highest registration rates, followed by those in 2-year schools and vocational schools. The greatest difference, however, is between students and non-students, with non-students registered at rates about 15 percentage points lower than any type of postsecondary student (not in table).

Socioeconomic status was consistently related to voter registration, overall and across all three racial/ethnic groups and most student categories: the higher the SES, the greater the likelihood of registration. Similarly, those whose families owned homes in 1980 were more likely to have registered to vote than those from families who rented; this difference held across all categories. Finally, there were small variations in registration by region of residence in 1980. The highest rates were found in the North and the lowest in the East and the West.

Table 14 presents data comparable to that in table 13, this time on the act of voting itself. As can be seen by a comparison of the two tables, there is one striking difference between them: whereas two-thirds (66 percent) of the class of 1980 had registered to vote by spring of 1984, less than half (47 percent) had actually voted in a local, state, or national election. These tables, however, have many more similarities than differences. The patterns observed for voting were similar, for the most part, to those for registration (though they continued at rates about 20 percentage points lower).

Table 13. Percentages of 1980 high school seniors with specified race/ethnicity, PSE status, and background characteristics who had registered to vote: spring 1984.

Characteristics	Total	Race/ethnicity			PSE participation		
		Hispanic	Black	White	Vocational	2-year college	4-year coll./univ.
Total population	66	56	72	67	73	74	88
Sex:							
Male	66	55	69	66	73	72	78
Female	67	57	74	67	73	75	81
H.S. program:							
General	62	68	71	61	62	74	77
Academic	75	62	74	77	81	77	81
Vocational	63	58	69	63	68	67	76
H.S. census region:							
East	64	58	67	64	73	75	77
North	71	74	79	71	73	78	84
South	66	59	72	64	73	76	79
West	63	51	65	66	72	74	79
SES quartile:							
4th quartile high	76	71	82	76	82	74	82
3rd quartile	69	65	74	78	68	78	88
2nd quartile	65	61	74	64	73	74	79
1st quartile low	61	56	69	59	58	65	71
Family owns home:							
Renter	68	58	78	57	58	72	73
Homeowner	69	62	73	69	74	73	81

Table 14. Percentages of 1980 high school seniors with specified race/ethnicity, PSE status, and background characteristics who had voted in a local or national election between March 1982 and February 1984.

Characteristics	Total	Race/ethnicity			PSE status		
		Hispanic	Black	White	Vocational school	2-year college	4-year coll./univ.
Total population	47	39	58	47	48	56	58
Sex:							
Male	47	38	47	48	56	58	57
Female	47	39	53	47	41	54	59
H.S. program:							
General	44	41	49	44	48	54	56
Academic	54	46	54	55	57	59	59
Vocational	44	33	46	45	41	46	55
H.S. census region:							
East	47	48	49	47	57	62	55
North	49	43	62	49	43	51	62
South	45	38	47	45	45	52	55
West	47	38	48	49	47	58	63
SES quartile:							
4th quartile high	56	56	58	56	45	60	60
3rd quartile	50	48	52	50	53	51	60
2nd quartile	45	40	54	45	49	57	57
1st quartile low	42	35	47	41	42	47	49
Family owns home:							
Renter	41	41	47	40	43	43	53
Homeowner	50	42	51	51	51	57	59

Life Goals

The differences in percentages of respondents rating specific life goals as very important in 1980 and in 1984 are shown in Figure 5. A bar above the line indicates a larger percent in 1984 than in 1980 rated the goal very important. A bar below the line indicates a lower percentage in 1984.

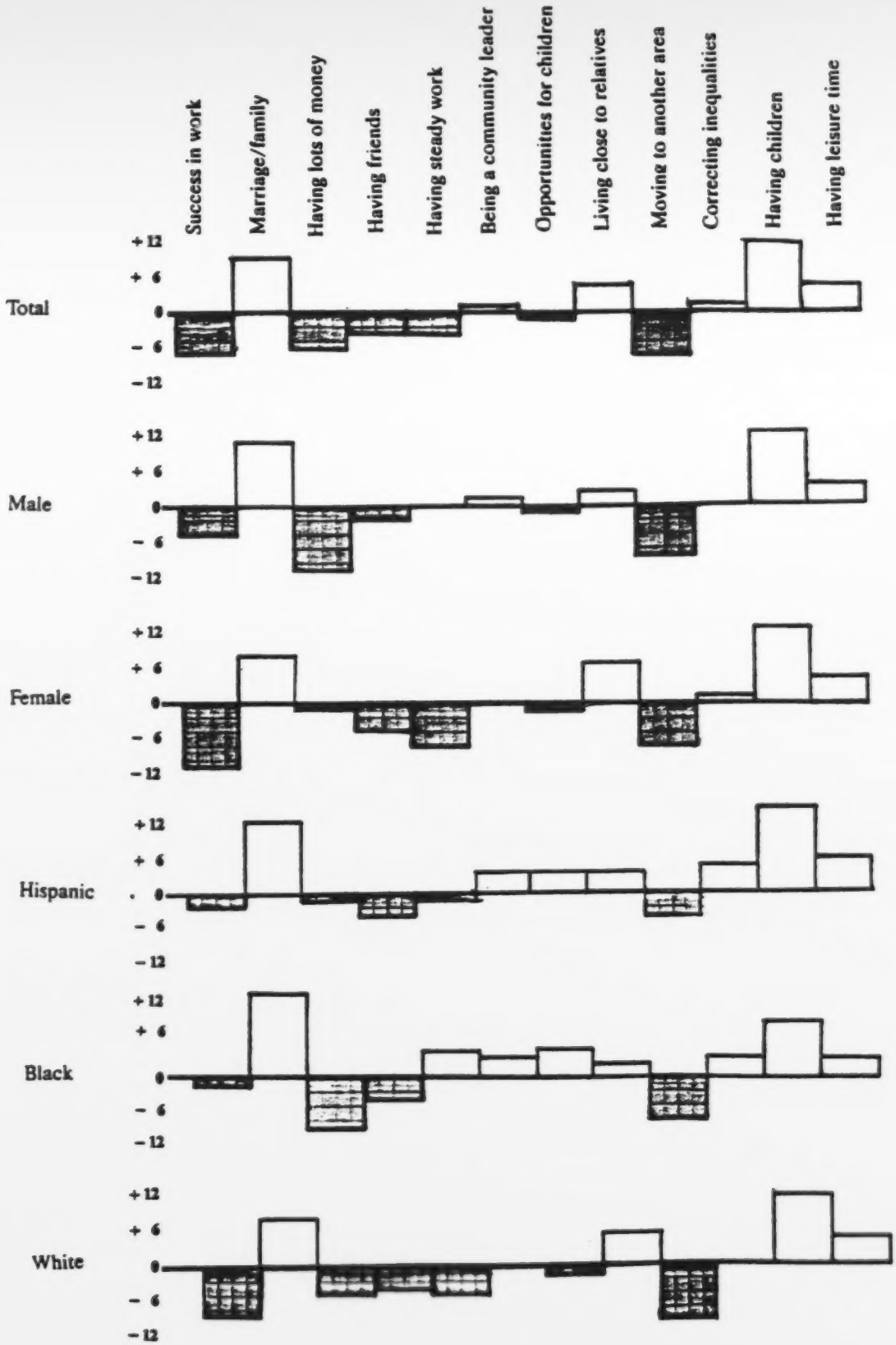
The results of the second follow-up survey in 1984 suggest that the values of the class of 1980 are becoming more oriented toward family and personal life and less toward success and mobility as the cohort ages. Comparison of these results with those from 1980 shows marked increases in "very important" ratings on only four items, all related to family and personal life: finding the right person to marry and having a happy family life (up 7 points), living close to parents and relatives (up 4 points), having children (up 10 points), and having leisure time (up 4 points).

There were corresponding declines in the ratings of success in work (down 6 points), having lots of money (down 5 points), and moving away from the area of current residence (down 6 points) as very important. There were also small decreases in the ratings for finding steady work and having strong friendships, but both were still rated very important by high percentages of young people 79 and 76 percent, respectively (not shown in figure). There was little or no change in the ratings for being a leader in the community, being able to give one's children better opportunities, and working to correct social and economic inequalities.

The pattern of change between 1980 and 1984 was similar for males and females on most life goals. The one item on which the sexes differed overall was in the importance attached to finding steady work: males showed no change from 1980 (remaining at 81 percent), whereas the proportion of females rating this as very important was down 6 percentage points. Females, then, accounted for all of the decline in the percentage of the total population rating steady work as very important. Also, males' views on the importance of money became closer to those of females. In 1980, for example, 39 percent of the males rated money as very important compared to 22 percent of the females (not shown in figure). By 1984 the difference shrank to 9 percentage points, as the rate for females declined only 1 point and the rate for males declined 9 points. In contrast, with regard to success in work, males and females differed more in 1984 than they did in 1980. Whereas equal proportions of males and females (86 percent) rated success in work as very important in 1980, their ratings declined differentially, with the females dropping by 9 points and the males declining by only 4 points.

The three race/ethnicity groups examined in Figure 5 follow, in general, the patterns observed for the total population and for males and females. All three groups showed decreases in the percentages placing a high value on success, money, friends, and getting away from current areas of residence; all showed increases

Fig 5 Percent change in life goals rated "very important" between 1980 and 1984



in the percentages placing a high value on marriage and family, living near parents and relatives, having children, and having leisure time.

Whites had the largest decrease in the percentage valuing success in work highly (a 7 point drop), which moved them from most likely to value it in 1980 to least likely to do so in 1984. Blacks had the greatest decrease in the percentage valuing having lots of money (a 7 point drop), but they remained most likely to rate it high (35 percent, versus 31 for Hispanics and 23 for whites).

All three racial/ethnic groups registered high percentages for marriage and family in both years, and most show large increases (10 to 12 percentage points) between 1980 and 1984. All three groups showed increases (from 8 to 12 percentage points) in the proportions who rated having children as very important. The changes on this item for the three groups served to maintain their relative positions. Blacks began as somewhat less likely than Hispanics and whites to place a high value on having children in 1980, and, despite the overall increase for all groups, blacks were still less likely to desire children in 1984. Blacks were .pa also least likely in both years to place a high value on having strong friendships, trailing other groups by 12 to 27 points.

As they move into adulthood, the 1980 seniors are joining the ranks of a generation that has been characterized as achieve-ment oriented, mobile, somewhat self-indulgent, and less socially conscious than its predecessors. The degree to which the 1980 seniors have adopted the values of the young and upwardly mobile can be examined by looking at some of the life goals. Six relevant life goals have been selected and are summarized in table 15. Three of the life goals--success in work, having lots of money, and being a leader reflected achievement orientation. Living close to relatives provides a measure of familial values; and correcting social and economic inequalities taps social conscience. High ratings for having leisure time may indicate less emphasis on achievement and success.

The 1980 seniors' responses to questions about life goals suggest a mixed set of values that cannot be characterized as uniquely achievement or success oriented. In fact, the ratings show some ambivalence about success. While 80 percent said work was very important, only 25 percent gave having lots of money the same rating. (Likewise only 10 percent thought that being a leader was very important). Despite the high rating for success, 72 percent gave high marks to having leisure time.

Concern over social issues has not been a hallmark of the current young adult population, and the 1980 seniors seem to be following suit. Only 13 percent thought it was very important to correct social and economic inequalities.

It is difficult to say whether the importance attached to living near parents and relatives reveals much about family values. Only a minority (18 percent) thought this was very important, but

Table 15. Percentages of 1980 high school seniors with specified background characteristics who rated specified life goals as "very important": spring 1984.

Characteristics	Success in work	Lots of money	Being a leader	Living near relatives	Correcting inequalities	Leisure time
Total population	80	25	10	10	13	72
H.S. test quartile:						
4th quartile high	82	28	11	12	14	76
3rd quartile	84	21	9	15	11	72
2nd quartile	79	23	8	20	11	71
1st quartile low	78	31	11	20	17	67
SES quartile:						
4th quartile high	84	25	13	14	15	74
3rd quartile	82	25	10	17	12	75
2nd quartile	78	21	8	10	11	70
1st quartile low	77	25	8	10	15	67
PSE type and status (10/83):						
Private 4-year	91	27	15	14	19	77
Public 4-year	89	24	14	14	15	79
Other	84	20	13	17	15	77
Non-student	70	26	8	20	12	71
Military service:						
Served in military	86	25	12	13	13	72
Did not serve	82	26	10	10	14	74
Had any children (2/84):						
Had children	77	23	7	21	14	66
No children	83	26	10	10	13	76
Employment status (2/84):						
Employed	82	26	10	19	13	75
Unemployed	73	31	11	20	15	64

this may not represent a value unique to this age group. Geographic mobility has been a common feature of American society, and the 1980 seniors' ratings may simply reflect the status quo.

Summarizing the overall set of life goal ratings for the total population, the 1980 seniors appear to place some emphasis on achievement and success, but their ratings are inconsistent. With respect to social issues, they appear to follow the lead of other young adults in demonstrating only limited concern.

Differences between test quartiles were not large, but there was a slight tendency for those who scored high to place a high value on success in work and having leisure time. There was a modest inverse relationship between test score and both having lots of money and living near relatives.

Again, although differences were small, higher SES persons were somewhat more likely to places high value on success in work, leisure time, and being a leader; the reverse was true for living close to parents and relatives. SES has surprisingly little to do with rating lots of money as very important. Those in the highest and lowest quartiles were slightly more likely to attach importance to correcting inequalities.

Success in work received its highest ratings from those enrolled in colleges and universities, especially those in private schools in 1983, and its lowest from those not enrolled in any form of postsecondary education. Non-students were also least likely to place a high value on leisure time. Like SES, post-secondary education seems to have little relationship to evaluations of having lots of money: the range for the four groups' evaluations of it as very important is only 4 percentage points. Students in private 4-year schools were more likely than all others to place a high value on both being a leader and correcting inequalities; non-students were least likely to do so. Students enrolled in four-year schools were less likely than others to think that living near relatives was very important.

Members of the class of 1980 who had not yet become parents by spring 1984 were more likely to evaluate 4 out of 6 of the goals in table 15 as very important. The biggest differences between parents and non-parents was in success in work, where there was a 6 point difference, and leisure time, with a 10 point difference. On other life goals, differences were small.

Employment status is related to rating several of the life goals in table 15 as very important. Not surprisingly, the largest differences between the two groups arise in the ratings of work, money, and leisure time. As might be expected, the employed were more likely to rate success in work and leisure time as very important, the unemployed to rate having money as very important. Those who had ever served in the military were more likely than those without military experience to place a high value on success in work and less likely to value living near relatives.

Appendix A

High School and Beyond Data Files Available for Public Use

BASE YEAR FILES

Language File

The Language File contains information on each student who reported some non-English language experience either during childhood or at the time of the base year survey. This file contains 11,303 records (sophomores and seniors combined), with 42 variables for each student.

Parent File

The Parent File contains questionnaire responses from the parents of about 3,600 sophomores and 3,600 seniors who are on the Student File. Each record on the Parent File contains a total of 307 variables. Data on this file include parents' aspirations and plans for their childrens postsecondary education.

Twin and Sibling File

The Twin and Sibling File contains base year responses from sampled twins and triplets; augmented data on twins and triplets of sample members; and data from siblings in the sample. This file (2,718 records) includes all of the variables that are on the HS&B student file, plus two additional variables (family ID and SETTYPE--type of twin or sibling).

Teachers' Comments File

The Sophomore Teacher File contains responses from 14,103 teachers on 18,291 students from 616 schools. The Senior Teacher File contains responses from 13,683 teachers on 17,056 students from 611 schools. At each grade level, teachers had the opportunity to answer questions about HS&B-sampled students who had been in their classes. The typical student in the sample was rated by an average of four different teachers. Preliminary analyses by CS indicate that the files contain approximately 76,000 teacher observations of sophomores and about 67,000 teacher observations of seniors.

Friends' File

The Friends' File contains identification numbers of students in the HS&B sample who were named as friends of other HS&B-sampled students. Each record contains the ID of sampled students and IDs of up to three friends. Linkages among friends can be used to investigate the sociometry of friendship structures, including reciprocity of choices among students in the sample, and for tracing friendship networks.

MERGED BASE YEAR AND FIRST FOLLOW-UP FILES

Sophomore File

The First Follow-Up Sophomore File contains responses from 29,737 students and includes both base year and first follow-up data. This file includes information on school, family, work experiences, educational and occupational aspirations, personal values, and test scores of sample participants. Students are also classified as to high school status as of 1982 (i.e., dropouts, same school, transfer, or early graduate).

Senior File

The First Follow-Up Senior File contains responses from 11,995 individuals and includes both base year and first follow-up data. This file includes information from respondents concerning their high school and postsecondary experiences and their work experiences.

OTHER FILES

Transcript File

This file describes the coursetaking behavior of 15,941 sophomores of 1980 throughout their four years of high school. Data include a six-digit course number* for each course taken, along with course credit, course grade, and year taken. Other items of information, such as grade point average, days absent, and standardized test scores, are also contained on the file.

Offerings and Enrollments File

This file contains school information, and course offerings and enrollments data, for 957 schools. Each course offered by a school is identifed by a six-digit course number.* Other information, such as credit offered by the school, is also contained on each record.

Updated School File

This file contains base year data (966 completed questionnaires) and first follow-up data (956 completed questionnaires) from the 1,015 participating schools in the HS&B sample. First follow-up data were requested only from those schools that were still in existence in spring 1982 and had members of the 1980 sophomore cohort currently enrolled. Each high school is represented by a single record that includes 230 data elements from the base year school questionnaire, if available, along with other information from sampling files (e.g., stratum codes, case weights).

*Corresponds with descriptions in A Classification of Secondary School Courses (CSSC), developed by Evaluation Technologies, Inc., under contract with NCES, July 1982.

Appendix B

Definition of Classification Variables

Sixteen major classification variables were used in this report to define subgroups for analysis: sex, race/ethnicity, handicap program, socioeconomic status (SES), family income level, family size, geographical region, urbanicity, high school program, cognitive test composite, high school grade point average, high school type, postsecondary education plans, postsecondary education type and status for October 1983 and February 1984, and tuition level. Table B-1 shows the composition of the second follow-up survey sample by selected classification variables.

Sex

Student's sex was available in five survey documents. If one or more of the sources contained a valid sex code and none of the sources contained conflicting information, that sex code was used. In 857 cases either no valid sex code was found or contradictory information was provided. In these cases, the respondent's sex was determined by inspection of first names and a review of the documentation.

Race/Ethnicity

Race and ethnic origin codes were available from both base-year and first follow-up questionnaires. Persons were classified into mutually exclusive racial-ethnic groups based on the following hierarchical sequence: (1) if a Hispanic ethnic origin was indicated either year, the person was classified as Hispanic and also further identified as Mexican, Cuban, Puerto Rican, or other Hispanic; (2) if a race code American Indian/Alaskan Native was indicated either year, the person was classified as American Indian/Alaskan Native; (3) if an Asian/Pacific Islander race code was present either year, the person was classified as Asian/Pacific Islander; (4) if a race code of black was present either year, the person was classified as black; (5) if a race code of white was present either year, the person was classified as white. The 125 remaining students were identified as "other".

Handicap Program

This variable indicates whether respondents ever reported having a handicap and/or participating in a program for the handicapped. Respondents were classified according to the following hierarchy: handicapped program, if they had ever participated in a program for the handicapped; consistent handicap, if they reported a physical or other kind of handicap in both the base year and the first follow-up surveys; inconsistent handicap, if a handicap was reported in one survey but not the other; not handicapped, if the respondent never reported a handicap.

Socioeconomic Status (SES) Quartile

The SES index is a composite of five equally-weighted components: father's education, mother's education, family income, father's occupation, and household items. The index values are based on information provided in the base year survey. Quartiles were created based on the weighted SES distribution.

Family Income

Data from parents and respondents were used to determine family income at the time of the base year survey. Three levels are presented: low, which is less than $12,000 per year; moderate, if between $12,000 and $19,999; and high, if over $20,000.

Family Size

Family size refers to the family with whom the respondent lived during the base year survey. Size of the family was determined from checklists of relatives with whom the respondent lived and the number of siblings reported.

H.S. Geographic Region

HS&B was designed to provide estimates for each of nine Census Bureau sections. In this report, some tables collapse the regions to four major regions. These regions are as follows: East--Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania; North--Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; South--Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, and Texas; West--Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii.

H.S. Urbanicity

Persons were assigned to one of three categories based on the location of the school they attended in the base year survey: urban if located in the central city of a Standard Metropolitan Statistical Area (SMSA); suburban if located in an SMSA, but outside the central city; and rural if not located in an SMSA.

County Unemployment Rate--1982

Indicates the county unemployment rate for the county in which the respondent's high school is located. Data were obtained from the Bureau of Labor Statistics.

H.S. Program

High school curricular program was identified from the answers of seniors during the base year to the question "Which of the following best describes your present high school program?" The student could mark "general," "academic or college preparatory," or any of seven "vocational" (occupational preparation) areas.

H.S. Grade Point Average

Grade point average reported by the respondent during the base year survey.

H.S. Test Quartile

This quartile contains the respondent's composite test score. The composite test score is the average of the standardized scores for the reading, mathematics, and combined vocabulary tests which were taken during the base year.

H.S. Type

Respondent's school sample type: public or private.

Postsecondary Education (PSE) Plans

Plans for postsecondary education which were reported during the base year survey.

Postsecondary Education (PSE) Type and Status, October 1983 and February 1984

Respondents were classified according to whether or not they were enrolled in a postsecondary school during October 1983 and February 1984. If enrolled in a school at either or both time points, they were further identified as full- or part-time, and the school was identified as a public, private or other institution and as a 2- or 4-year school.

Tuition Level--1st PSE Institution

Tuition for each school reported by the respondent was obtained from the 1980-81, 1981-82, or 1982-83 Higher Education General Information Survey directories. In-state and out-of-state tuition was assigned according to a set of rules regarding the state of residence of the student and the parents and whether or not the student was independent (according to Pell Grant rules).

Table B-1. Composition of 1980 senior cohort second follow-up survey sample by selected classification variables.

Classification variables and subgroups	Number	Percent*
Total population	11,995	100.0
Sex:		
Male	5,675	47.3
Female	6,320	52.7
Race/ethnicity:		
Hispanic	2,266	18.9
American Indian/Al.Native	229	1.9
Asian/Pacific Islanders	420	3.5
Black	3,192	26.6
White	5,763	48.0
Other	125	1.0
Handicap program:		
Handicap program	611	5.1
Consistent handicap	343	2.9
Inconsistent handicap	2,010	16.8
Not handicapped	8,940	74.5
Socioeconomic status (SES) quartile:		
4th quartile high	2,088	17.4
3rd quartile	2,301	19.2
2nd quartile	2,523	21.0
1st quartile low	4,218	35.2
Family income (12th grade):		
$11,999 or less	2,677	22.3
$12,000-19,999	3,210	26.8
$20,000 or more	4,405	36.8
H.S. geographic region:		
East	2,341	19.5
North	2,800	23.3
South	4,434	37.0
West	2,420	20.2
H.S. urbanicity:		
Urban	3,342	27.9
Suburban	5,441	45.4
Rural	3,212	26.8
H.S. program:		
General	4,118	34.3
Academic	4,328	36.1
Vocational	2,853	23.8

Table B-1 (continued)

Classification variables and subgroups	Number	Percent*
H.S. grade point average:		
A, 90-100	1,274	10.6
A & B, 85-89	2.321	19.3
B, 80-84	2,291	19.1
B & C, 75-79	3,198	26.7
C, 70-74	1,577	13.1
C & D, 65-69	643	5.4
D, 60-64	85	0.7
Below D, less than 60	14	0.1
H.S. test quartile:		
4th quartile high	2,305	19.2
3rd quartile	2,184	18.2
2nd quartile	2,365	19.7
1st quartile low	3,405	28.4
H.S. type:		
Public	10,661	88.9
Total private	1,334	11.1
PSE plans:		
None	1,877	15.6
Vocational/technical	2,091	17.4
Less than 4-year degree	1,722	14.4
College degree	2,898	24.2
Advanced degree	2,582	21.5
PSE type and status (10/83):		
Part-time private 4-year	107	1.0
Part-time public 4-year	301	2.8
Part-time public 2-year	465	4.3
Part-time other	43	0.4
Full-time private 4-year	908	8.3
Full-time public 4-year	1,984	18.2
Full-time public 2-year	491	4.5
Full-time other	144	1.3
Non-student	6,366	58.3
PSE type and status (2/84):		
Part-time private 4-year	104	1.0
Part-time public 4-year	282	2.6
Part-time public 2-year	406	3.7
Part-time other	38	0.3
Full-time private 4-year	888	8.1
Full-time public 4-year	1,912	17.5
Full-time public 2-year	440	4.0
Full-time other	144	1.3
Non-student	6,602	60.4

*Percentages are unweighted and may not add up to 100 percent due to rounding or to missing data.

Appendix C
Technical Notes

Sample Design

Base Year Survey. HS&B employed a two-stage, highly stratified sample design.[1] In the first stage, 1,122 schools that had either 10th or 12th grade students (or both) were drawn. To make the sample more useful for policy analysis, the following types of schools were oversampled: alternative public schools, public schools with high percentages of Hispanic students, Catholic schools with high percentages of minority group students, and high-performance private schools. In the second stage, 36 sophomores and 36 seniors were randomly selected, school size permitting. The sample was augmented by the addition of the co-twins of twins selected in the probability sample.

First and Second Follow-Up Survey. A subsample of 11,995 of the 1980 seniors selected for the base year survey was chosen to continue in follow-up surveys. To enhance the usefulness of the subsample for policy analysis, the following subgroups were oversampled: Hispanics and blacks, especially those with high cognitive test scores; Asian/Pacific Islanders; American Indian/-Alaskan Natives; whites from low SES backgrounds with high cognitive test scores; and persons whose parents had participated in a survey that collected data for addressing student financial aid policy questions.

The probability subsample included 495 persons who, although selected, had not participated in the base year survey. Questionnaires also were sent to all 204 co-twins of twins included in the probability subsample.

Accuracy of Estimates

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only on sample surveys but also in complete censuses of entire populations.

Nonsampling errors can be attributed to many sources: inability to obtain complete information about all students in all schools in the sample (e.g., some students are absent on the survey day, schools or students refuse to participate, students

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[1] Detailed Descriptions of the base year and follow-up survey sample designs may be found in Sample Design Report by M. Frankel, L. Kohnke, D. Buonanno, and R. Tourangeau, National Opinion Research Center (NORC) (December 1981) and First Follow-up (1982) Sample Design Report by Roger Tourangeau, H. McWilliams, C. Jones, M. Frankel, and F.O. O'Brien, NORC.

participate but answer only certain items, etc.); ambiguities in definitions; differences in interpretation of questions; inability or unwillingness to provide correct information; mistakes in recording or coding data; and other errors of collection, response, processing, sample coverage, and estimation of missing data.

The accuracy of a survey result is determined by the joint effects of sampling and nonsampling errors. In surveys with sample sizes as large as those employed by or in HS&B, nonsampling errors generally are the primary concern, except where separate estimates are made for relatively small subpopulations.

The three major ways in which survey data such as those obtained in HS&B may fall short of full accuracy are discussed below.

Nonresponse Bias. One of the most serious threats to the accuracy of survey estimates is bias resulting from failure to obtain data from all sampled units. A total of 811 (72 percent) of the 1,122 eligible schools chosen in the sample participated in the base year survey. Of the 311 schools that were unable or unwilling to participate, 204 were replaced with schools which matched them with regard to geographical area, enrollment size, community type, and other characteristics. This brought the total number of participating schools to 1,015 or 90 percent of the 1,122 target. A total of 1,445 eligible schools were contacted to obtain 1,015 participants.

The student-level base year survey response rate within participating schools was 85 percent. The first follow-up survey response rate was 94 percent, and the second follow-up survey response was 91 percent.

Base year survey design weights were adjusted for school-level nonresponse by appropriately distributing the design weights of nonparticipating schools to participating schools within each of 27 strata; and they were adjusted for student nonresponse by appropriately increasing the weights of participating students to compensate for students within the same school who did not participate. First follow-up survey nonresponse weight adjustments were made based on school type for base year survey nonparticipants.

The nonresponse bias for an estimated mean (or proportion) is a product of the nonresponse rate and the magnitude of the difference in the means (or proportion) between respondents and nonrespondents. The results of the three types of analysis of the effects of nonresponse are examined in the First Follow-up Sample Design Report which was mentioned ealier. The first analysis employed the first follow-up survey School Questionnaire data, which were obtained from over 400 of the eligible nonparticipating schools, to estimate school nonresponse bias. For most variables, the differences between the means for all eligible schools and cooperating schools were found to be less than 1 percent.

The second analysis employed first follow-up survey data to examine base year survey student nonresponse bias. The analysis found that the magnitudes of biases generally were small and in predictable directions. The median value of the bias estimates was less than 0.5 percentage points.

The third analysis examined first follow-up survey nonresponse patterns. Since the first follow-up survey nonresponse rate was less than one-half that for the initial survey (6 vs. 15 percent), nonresponse biases should be correspondingly lower, averaging no more than 0.25 percentage points. Second follow-up survey nonresponse was discussed in the Second Follow-up sample Design Report.[2] The response rate was about 30 percent lower in the second follow-up than the base year, and the corresponding nonresponse bias ranges between .3 and .4 percentage points.

While item nonresponse bias has not been studied explicity, it should not present a problem for most analysis. Item response rates generally were very high. Special steps were taken to obtain the information for the more important ("critical") questions. The steps were very successful, so that, for example, response rates of over 99 percent were achieved for selected activities as of February 1984 and marital status (chapter II). Even for noncritical items the response rates were quite good; for example, 96 percent for college field of study and 99 percent for whether a loan to finance schooling ever had been obtained (chapter III); 95 percent for starting salary in first job (chapter IV); an 96 percent for life goal items (chapter V).

Reliability and validity of data. HS&B provides a rare opportunity to examine the validity and reliability of student responses to questionnaire items. The opportunity arises from three unusual aspects of the study. First, data were collected from a subsample of about 6,500 parents. These data allow assessment of the validity of student responses to many of the questionnaire items that dealt with home and family background matters. Second, HS&B included about 500 sets of twins. Comparison of the answer of twins permits evaluation of the reliability of questionnaire responses dealing with commonly shared factual information. Third, high school transcripts collected in fall 1982 for about 16,000 sophomore cohort participants permit the assessment of the accuracy of student reports of high school grades and course work.

Analysis of twin data yielded results consistent with those found by other researchers regarding similar kinds of information obtained in a similar manner from high school students and young adults. The reliability and validity of response vary considerably depending on the nature of the item and the characteristics of the respondent. Contemporaneous, objective, and factually oriented

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[2]Second Follow-up (1984) Sample Design Report, C. Jones and B. Spencer, NORC, 1984.

items are more reliable and valid than subjective, temporarily remote, and ambiguous items; and older, white, and high-achieving students provide more reliable and valid responses than do younger, minority group, and low-achieving students. The results of this analysis are presented in an CS report entitled, The Quality of Responses of High School Students to Questionnaire Items. The results of an NLS-72 second follow-up survey test-retest reliability study and a review of the literature on the quality of responses to NLS-72 (and HS&B) type questions, may be found in Reliability and Validity of National Longitudinal Study Measures by A. Conger, J. Conger, and J. Riccobono, 1976, a report prepared for CS by the Research Triangle Institute.

In the future, much more accurate information about student financial aid and postsecondary education matters will be available from data obtained from official Federal grant and loan files, institution student financial aid office files, and from student transcripts.

Sampling error. All statistics presented in this report are weighted estimates of population parameters. The national (total U.S.) estimates are based on a probability sample of about 12,000 individuals selected from a population of about 3 million. Thus, in addition to nonresponse and other sources of nonsampling error, the estimates are subject to sampling error as well.

The standard error of an estimate reflects the degree of uncertainty in the estimate which is primarily due to sampling variation. Like most national samples, the HS&B sample, as described earlier, departs from a simple random sample in three respects: it is stratified, the selection of students were clustered by school, and certain kinds of schools and students deliberately were oversampled.

Each of these departures from simple random sampling has a predictable impact on the standard errors of sample estimates. The "root design effect" (deft) reflects the net impact of these departures on standard errors. The actual standard error is the product of deft times the corresponding estimate from a simple random sample. The median deft value for the second follow-up survey is 1.5 for estimates pertaining to the full population and 2.0 for estimates pertaining to Hispanics.

The standard errors of many of the estimated percentages presented in this report may be approximated, generally conservatively, by using the 75th percentile deft value of 1.6.

$$s.e.(p) = 1.6[(p)(100-p)/n] \quad ,$$

where n is the sample size. For example, it is estimated in table B-1 that 36 percent of the sample members were in an academic program in high school. The standard error of this estimate is approximately

$$1.6[(36)(100 - 36)/11,995] = .7 \text{ percent}$$

The reader should note that standard errors for crosstabular statistics such as those produced in this report, require n's for specified subpopulations such as males, females, Hispanics, blacks, whites, females in the highest SES quartile, Hispanics in the third test quartile, males who attended 4-year colleges, and so forth. Cell sizes for the tables contained in this report are stored in the cross-tabulations database, which is maintained by the Longtudinal Studies Branch at CS.

NORC, however, has calculated for certain variables more precise estimates of standard errors than those approximated by the above procedure. These estimates, obtained by a procedure called "balanced repeated replication," are reported in the High School and Beyond 1980 Senior Cohort Second Follow-Up Data File User's Manual and the Second Follow-Up Sample Design Report, both available from CS.

In comparing estimated means (or percentages) for two subgroups, the standard error of the difference was estimated by taking the square root of the sum of the two squared standard errors. These estimates of standard errors of differences are somewhat conservative for subgroups involving different students from the same schools since they assume that the covariance of the two estimates is zero. Actually, the positive correlation between cluster (school) influences on the two means (or proportions) tends to reduce the standard error of the difference.

The sample estimate and an estimate of its standard error permit us to construct interval estimates with prescribed confidence that the interval includes the average result of all possible samples (for a given sampling rate).

To illustrate, if all possible samples were selected, each of these were surveyed under essentially the same conditions and an estimate and its estimated standard error were calculated from each sample, then:

> Approximately 95% of the intervals from two standard errors below the estimate to two standard errors above the estimate would include the average value of all possible samples. We call an interval from two standard errors below the estimate to two standard errors above the estimate a 95 percent confidence interval.

All differences cited in the text of the report differ from zero by at least two estimated standard errors.